NASA 2004 Safety and Health Managers Meeting

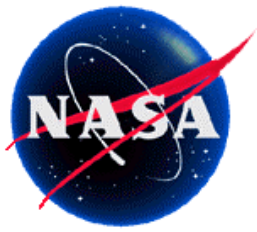# John C. Stennis Space Center Safety and Mission Assurance Overview

Mike Rewis / Charles Fallo

Office of Safety and Mission Assurance

March 3, 2004
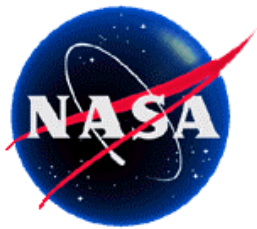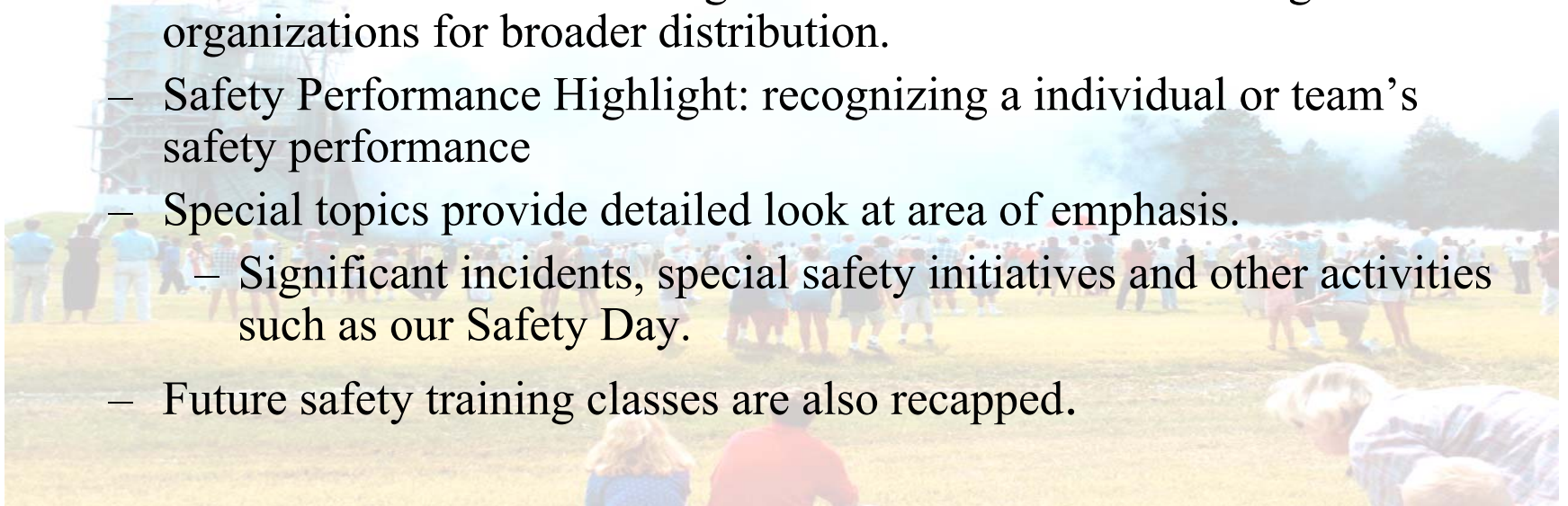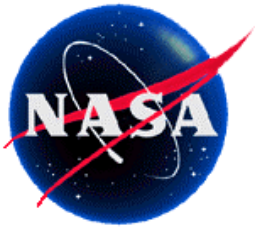
Agenda Overview

- **Center Wide Safety Activity**

- **Performance Metrics for Safety**

    - **Lost Time**

    - **Incidents**

    - **Close calls**

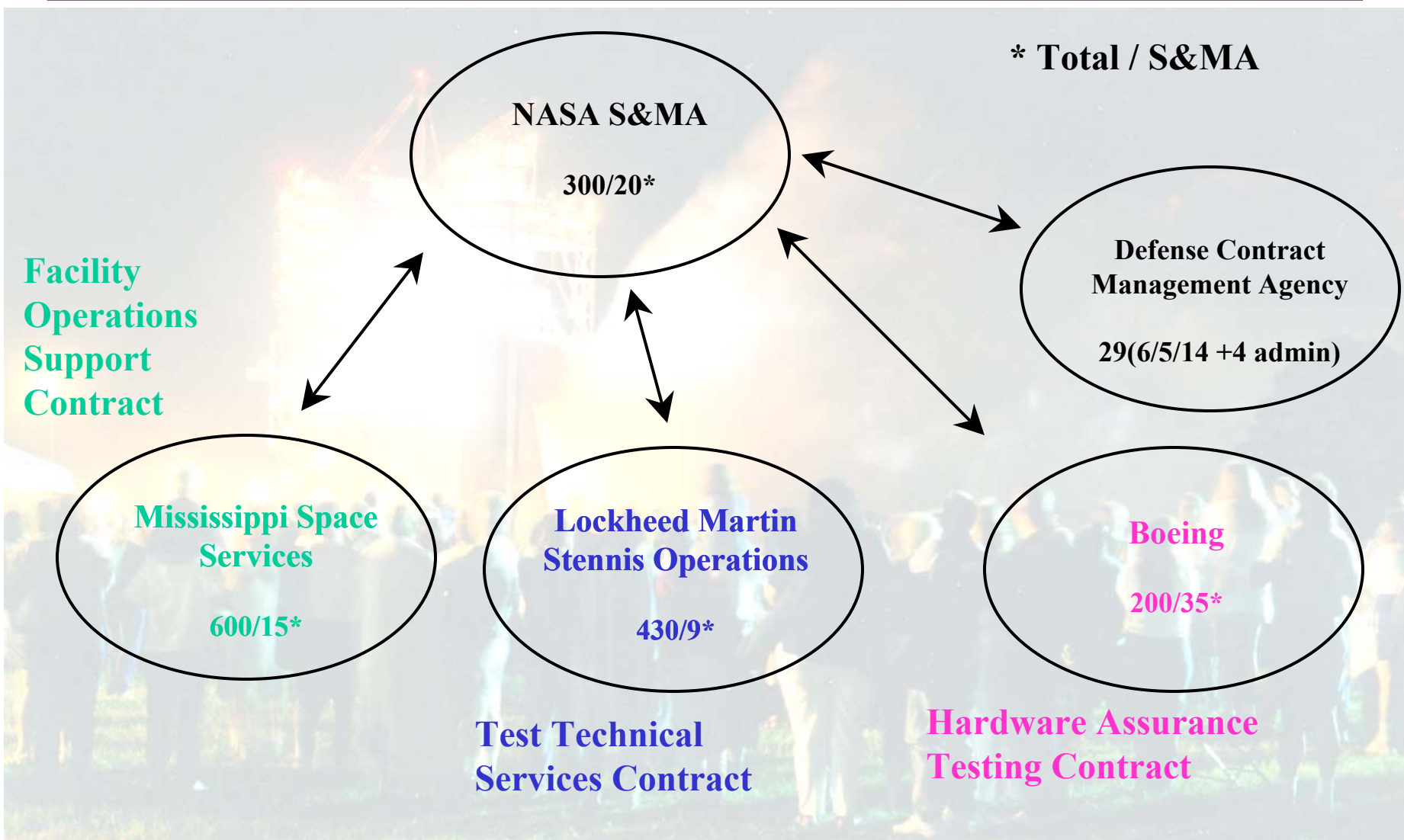- **Results of Code Health & Medical Systems Code Z Audit**
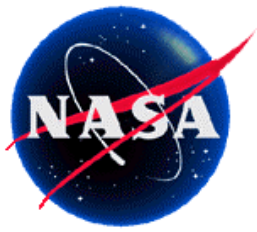
Center Wide Safety Activity

- Safety Management Council
  - Chaired by the Center Director and has membership consisting of the General managers of all our on-site support contractors.
  - Meets monthly to share the corrective actions for all our respective incidents/close calls. They are reviewed for broader application within each of our contractors and NASA organizations. These are also distributed to line management in each of our attending organizations for broader distribution.
  - Safety Performance Highlight: recognizing a individual or team's safety performance
  - Special topics provide detailed look at area of emphasis.
    - Significant incidents, special safety initiatives and other activities such as our Safety Day.
  - Future safety training classes are also recapped.

SSC & Contractors' S&MA Schematic

* Total / S&MA

NASA S&MA

300/20*

Defense Contract Management Agency

29(6/5/14 +4 admin)

Facility Operations Support Contract

Mississippi Space Services

600/15*

Lockheed Martin Stennis Operations

430/9*

Boeing

200/35*

Test Technical Services Contract

Hardware Assurance Testing Contract

S&MA Management Mechanisms

- Weekly staff meetings
- Weekly meetings with contactor's S&MA managers
- Monthly Technical Monitor Meetings
- Bi-monthly Safety & QA Status Meeting
- Active Use of the Contract Performance Award Fee, CPAF and the Performance Evaluation Board, PEB, Process
- Monitor changes in program requirements
- Working Groups
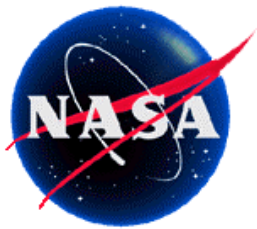- Configuration Control Boards
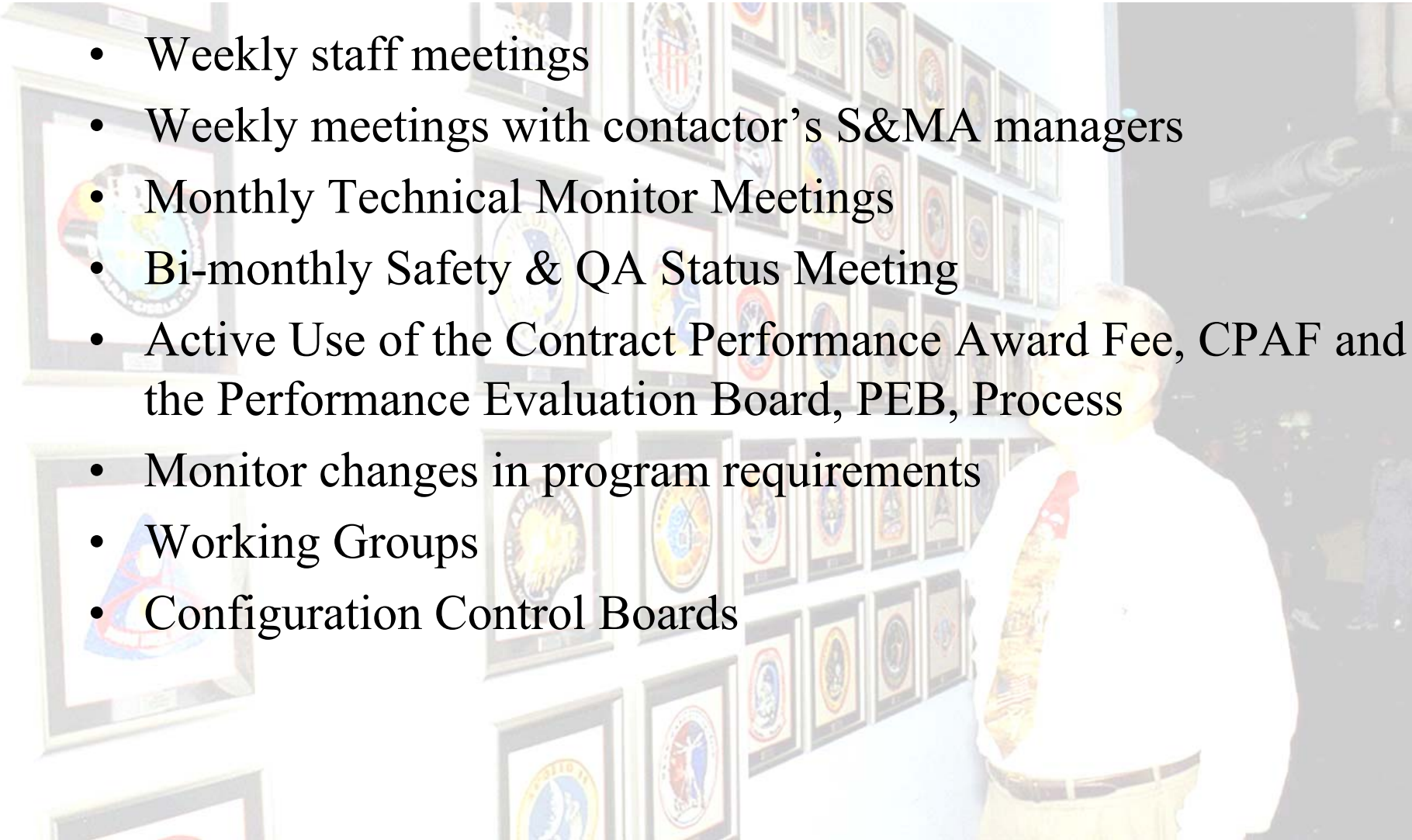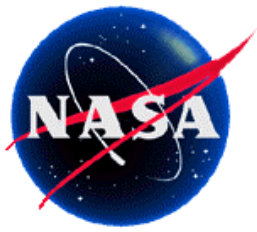
Safety Activity in Programs

- NASA safety personnel monitoring site activity

  - Design Reviews

  - OSHA Compliance

  - Work Procedure review

  - Test Procedure review

  - Quantity Distance analysis

  - Continuous Risk Management

  - Hazard Analysis

 - Risk Based Acquisition Management

Safety Management Activity

- As SSC pursued our ISO registration, we developed a Customer Service Manual/Business Management Manual as our top-level document.

  It contains SSC's overall goals and objectives. Safety is first within each of these,

  - Goal: "*Become the NASA leader in safety of people, assets, and the environment*",

  - Quality Objective: "*Conduct operations and processes safely*".

- We have incorporated these into each NASA employee's performance plan.

- **E**xcellence **S**afety **P**eople **R**espect **I**ntegrity **T**eamwork
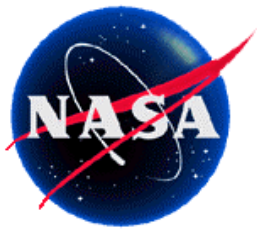
SSC Occupational Safety Metrics Summary (Civil Service)

- **Type A or B Mishaps:** There were **0** Type A and **0** Type B mishaps in December 2003 (FY 04). There were **0** Type A and **0** Type B mishaps in FY 03.

- **Lost Time Injury Rate (LTIR):** LTIR in December 2003 (FY 04) is **0**. This is within the target of **< 0.2**. There were **0** lost time injuries for the month of December 2003 (FY 04).

- **Lost Time Injury Severity Rate (LTISR):** LTISR in December 2003 (FY 04) is **0**. This is within the target of **< 1.01**. There were **0** lost days in the month of December 2003 (FY 04.)

- **Mishaps:** There were **0** mishaps in December 2003 (FY 04). This meets the target of **zero** mishaps.

- **Close Calls:** There was **2** close call reported in December 2003 (FY 04). There were **36** close calls reported in FY 03.

- **Property Damage:** There was **$0** property damage reported in December 2003 (FY 04). This meets the target of **zero** property damage.
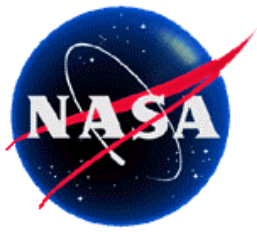
# SSC Occupational Safety Metrics Summary (Contractor)

- **Type A or B Mishaps:** There were **0** Type A and **0** Type B mishaps in December 2003 (FY 04). There were **0** Type A and **0** Type B mishaps in FY 03.

- **Lost Time Injury Rate (LTIR):** LTIR in December 2003 (FY 04) is **1.75**. This exceeds the target of **< 0.90**. There was **1** lost time injury for the month of December 2003
  - Reason for injuries: Improper use of ladder and cabinet for support by the employee.
  - Corrective actions: Employee participation in the crew safety meeting to discuss this incident. Supervisor will review current ladder and hand tool inventory, and provide procurement recommendations.

- **Lost Time Injury Severity Rate (LTISR):** LTISR in December 2003 (FY 04) is **39.5**. This exceeds the target of **< 35.98**. There were **50** lost days in the month of December 2003 (FY 04.)
  - Reason for lost days: The December case totaled **19** Lost Work Days. There is an on going lost time case from November which added an additional **31** days.
  - Corrective actions: **November's:** No physical changes to the table or surrounding area need to be implemented. Employee to be counseled on his return to work to raise his overall level of safety awareness. **December's:** The Department Manager, Supervisor and employee met to review the incident. There was discussion of different types of ladders (including platform ladder types) and hand tools that could be used to avoid excessive reaching. The employee agreed to participate in the crew safety meeting this month to discuss this incident with his fellow workers.
  - **Mishaps:** There were **6** mishaps in December 2003 (FY 04). This exceeds the target of **zero** mishaps.

- **Close Calls:** There were **12** close calls reported in December 2003 (FY 04). There were **193** close calls reported in FY 03.

- **Property Damage:** There was **$0** property damage reported in December 2003 (FY 04). This meets the target of **zero** property damage.
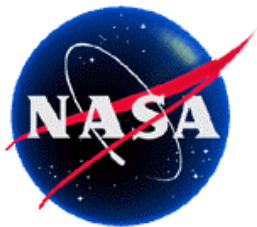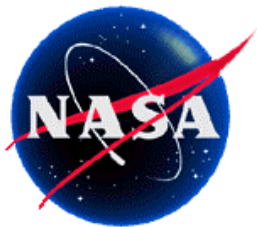
SSC Lost Time Injury Rate (LTIR) – Type C
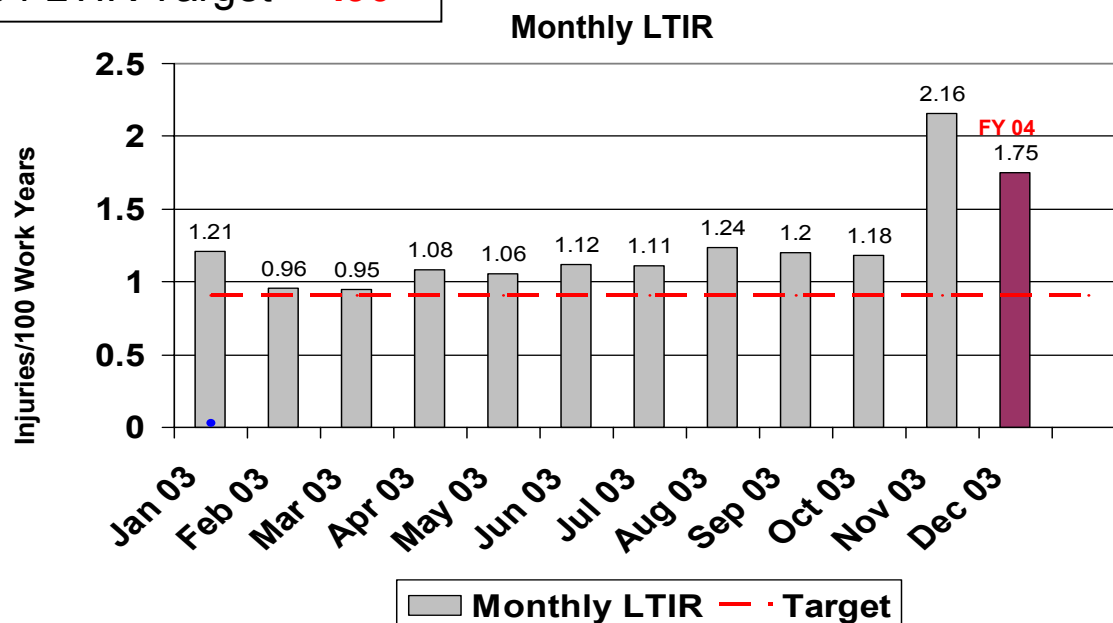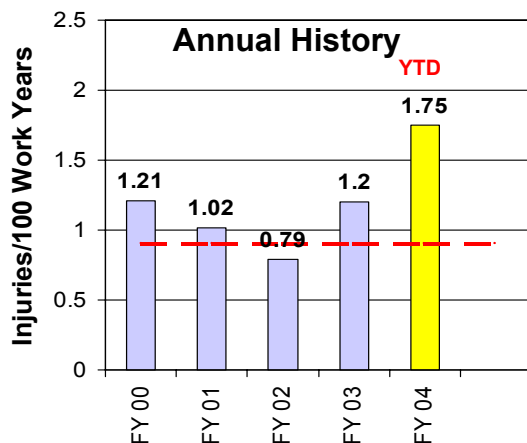## (Civil Service)

FY 2004 LTIR Target **< 0.2** *

Annual History

Monthly LTIR
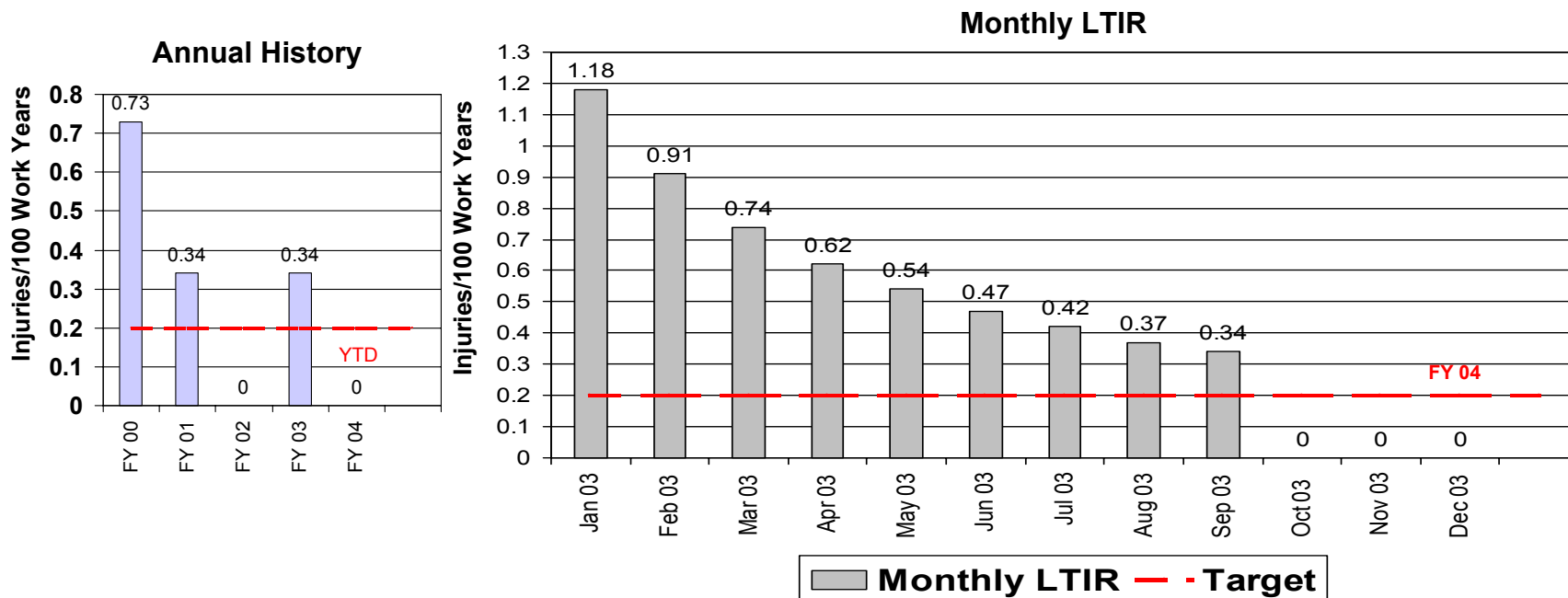
- **FY 2004 LTIR for Civil Service = 0 lost time injuries x 200k hours/ 120.6k hours worked = 0 (within target)**
  - **LTIR is down over recent years**
  - **FY 2004: 0 lost time injuries; 120.6k hours worked**
  - **December 2003 : 0 lost time injuries; 49k hours worked**

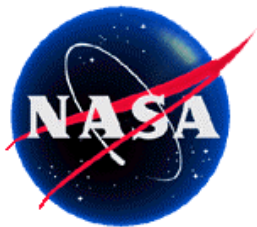•Annual LTIR target is based on a 10% reduction over the previous SSC 3 year average.

SSC Lost Time Injury Rate (LTIR) – Type C
## (Contractor)

FY 2004 LTIR Target **< .90** *

Annual History

YTD

1.21 1.02 0.79 1.2 1.75

FY 00 FY 01 FY 02 FY 03 FY 04

Monthly LTIR

2.16 FY 04 1.75

1.21 0.96 0.95 1.08 1.06 1.12 1.11 1.24 1.2 1.18

Jan 03 Feb 03 Mar 03 Apr 03 May 03 Jun 03 Jul 03 Aug 03 Sep 03 Oct 03 Nov 03 Dec 03

☐ **Monthly LTIR** — · **Target**

- **FY 2004 LTIR for Contractor = 5 lost time injuries x 200k hours/ 572.5k hours worked = 1.75 (exceeds target)**
  - **LTIR is up over recent years**
  - **FY 2004: 5 lost time injuries; 572.5k hours worked**
  - **December 2003 : 1 lost time injury; 201.9k hours worked**

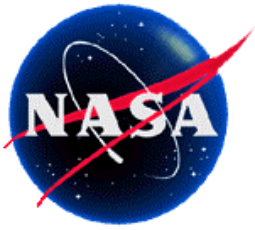* Annual LTIR target is based on a 10% reduction over the previous SSC 3 year average.

SSC Lost Time Injury Severity Rate (LTISR) – Type C (Civil Service)

FY 2004 LTISR Target **< 1.01** *

Annual History

Monthly LTISR
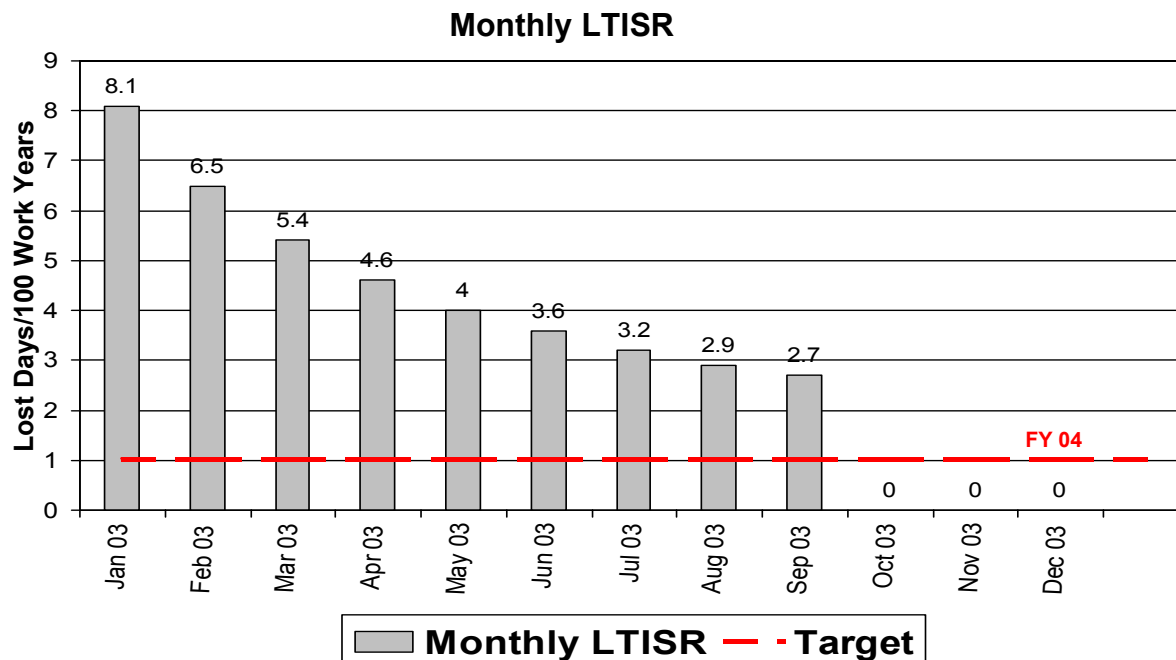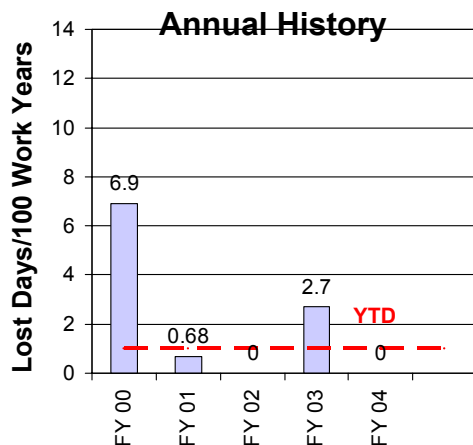
- **FY 2004 LTISR for Civil Service = 0 lost days x 200k hours/ 129.6k hours worked = 0 (within target)**
  - **FY 2004: 0 days lost; 129.6k hours worked**
  - December 2003 : 0 days lost; 49k hours worked

  * Annual LTISR target LTISR of 2.40 is based on a 10% reduction over previous SSC3 year average.
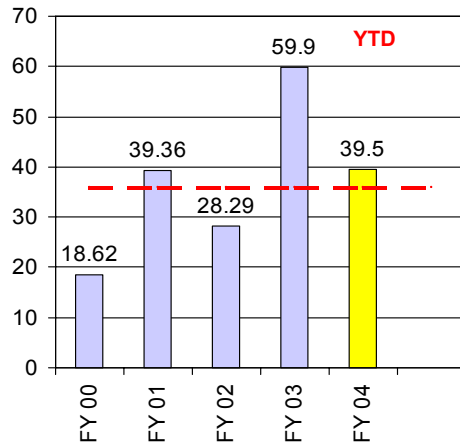
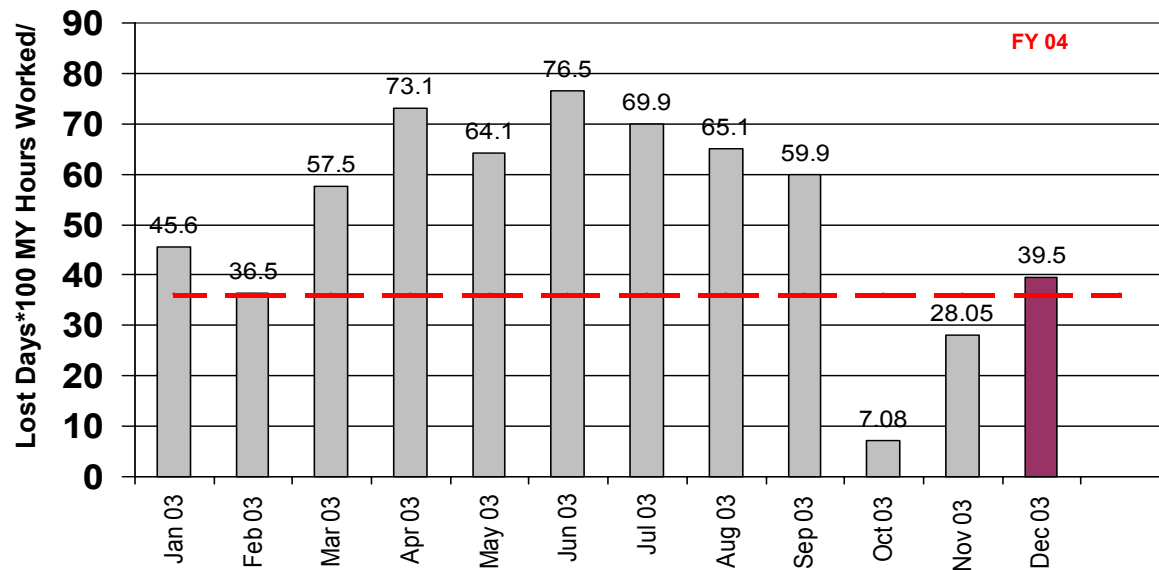# SSC Lost Time Injury Severity Rate (LTISR) – Type C (Contractor)

FY 2004 LTISR Target **< 35.98** *

Annual History

Lost Days*100 MY Hours Worked/

YTD

FY 00: 18.62
FY 01: 39.36
FY 02: 28.29
FY 03: 59.9
FY 04: 39.5

Monthly LTISR

Lost Days*100 MY Hours Worked/

FY 04

Jan 03: 45.6
Feb 03: 36.5
Mar 03: 57.5
Apr 03: 73.1
May 03: 64.1
Jun 03: 76.5
Jul 03: 69.9
Aug 03: 65.1
Sep 03: 59.9
Oct 03: 7.08
Nov 03: 28.05
Dec 03: 39.5
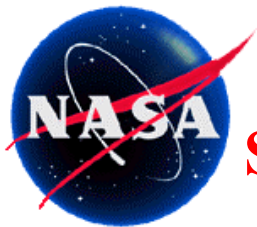
Monthly LTISR — · Target

- **FY 2004 LTISR for Contractors = 113 lost days x 200k hours/ 572.6k hours worked = 39.5 (exceeds target)**
  - FY 2004: **113** days lost; **572.6**k hours worked
  - December 2003 : **50** days lost; **201.9**k hours worked

* Annual LTISR target is based on 10% reduction in the previous SSC 3 year average.
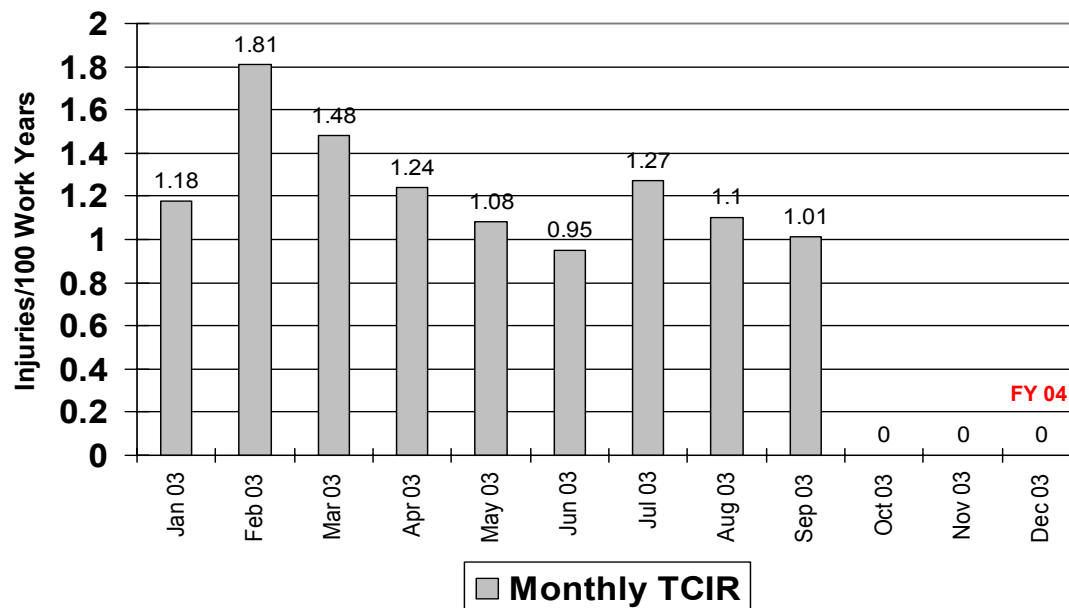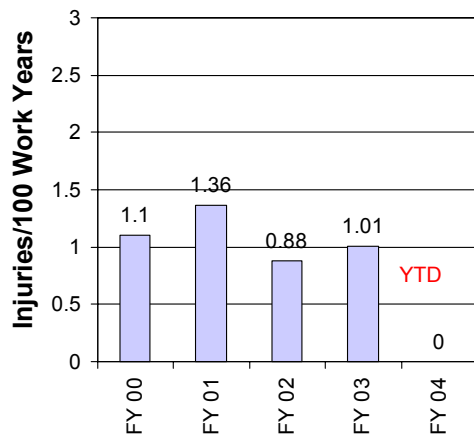
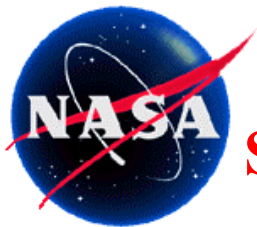# SSC Total Case Incident Rate (TCIR) – Type C & D
(Civil Service)

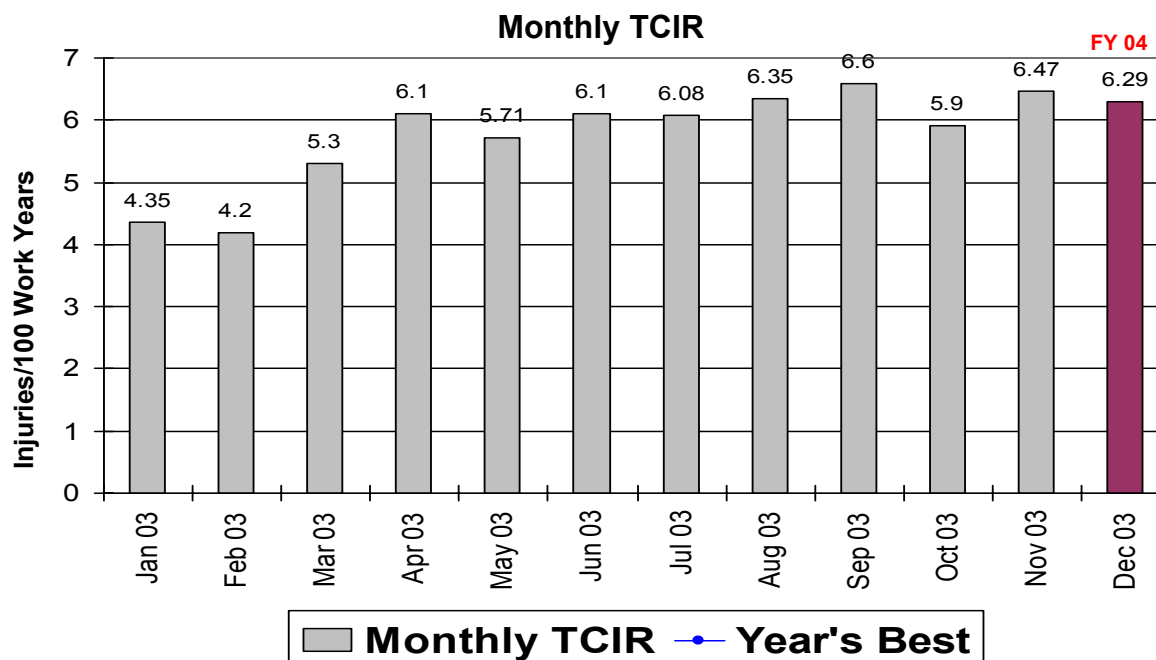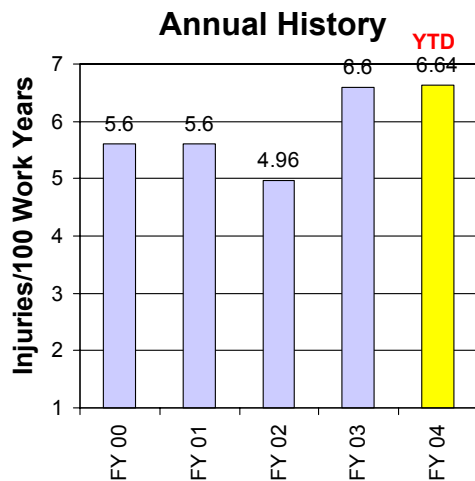FY 2004

Annual History

Monthly TCIR

- **FY 2004 TCIR for Civil Service = 0 cases x 200k hours / 129.6k hours worked = 0**
- **FY 2004: 0 lost time (Type C) + 0 medical (Type D) cases = 0 (total); 129.6k hours worked**
  - **December 2003: 0 lost time (Type C) + 0 medical (Type D) cases = 0 (total); 49,031k hours worked**

SSC Total Case Incident Rate (TCIR) – Type C & D
(Contractor)

FY 2004

Annual History

YTD

Injuries/100 Work Years

- FY 00: 5.6
- FY 01: 5.6
- FY 02: 4.96
- FY 03: 6.6
- FY 04: 6.64

Monthly TCIR

FY 04

Injuries/100 Work Years

Month	TCIR
Jan 03	4.35
Feb 03	4.2
Mar 03	5.3
Apr 03	6.1
May 03	5.71
Jun 03	6.1
Jul 03	6.08
Aug 03	6.35
Sep 03	6.6
Oct 03	5.9
Nov 03	6.47
Dec 03	6.29

▭ **Monthly TCIR** —•— **Year's Best**

- FY 2004 TCIR for Contractors = **18** cases x 200k hours / **572.6**k hours worked = **6.29**
  - FY 2004: **5** lost time (Type C) + **13** medical (Type D) cases = **18** (total); **572.6**k hours worked
  - December 2003: **1** lost time (Type C) + **5** medical (Type D) cases = **6** (total); **201.8**k hours worked
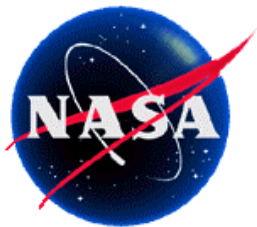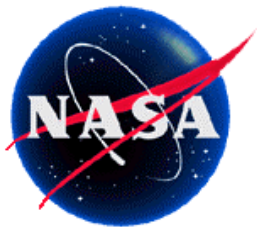
SSC Days Away From Work & Restricted Duty Cases Incident Rate (DARCIR) – Type C & Type D (Restricted Duty Cases only)
(Civil Service)

FY 2004

Annual History

Monthly DARCIR
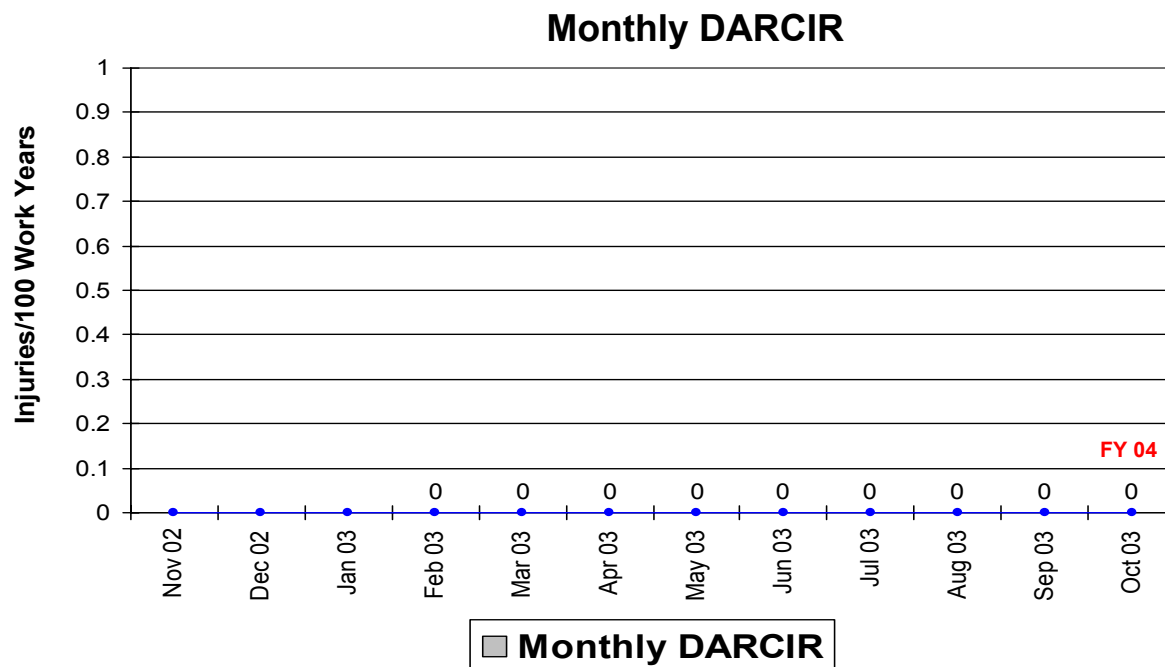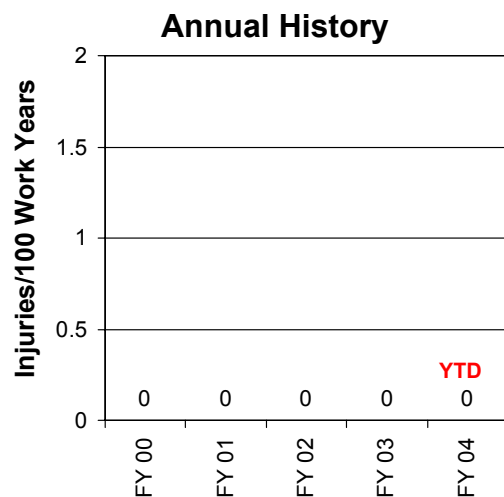
- FY 2004 DARCIR for Civil Service =0 cases x 200k hours / **129.6**k hours worked = **0**
  - FY 2004: **0** lost time (Type C) + **0** restricted duty only (Type D) cases = **0** (total); 129.6k hours worked
  - December 2003: **0** lost time (Type C) + **0** restricted duty only (Type D) cases = **0** (total); **49**k hours worked

SSC Days Away From Work & Restricted Duty Cases Incident Rate (DARCIR) – Type C & Type D (Restricted Duty Cases only)
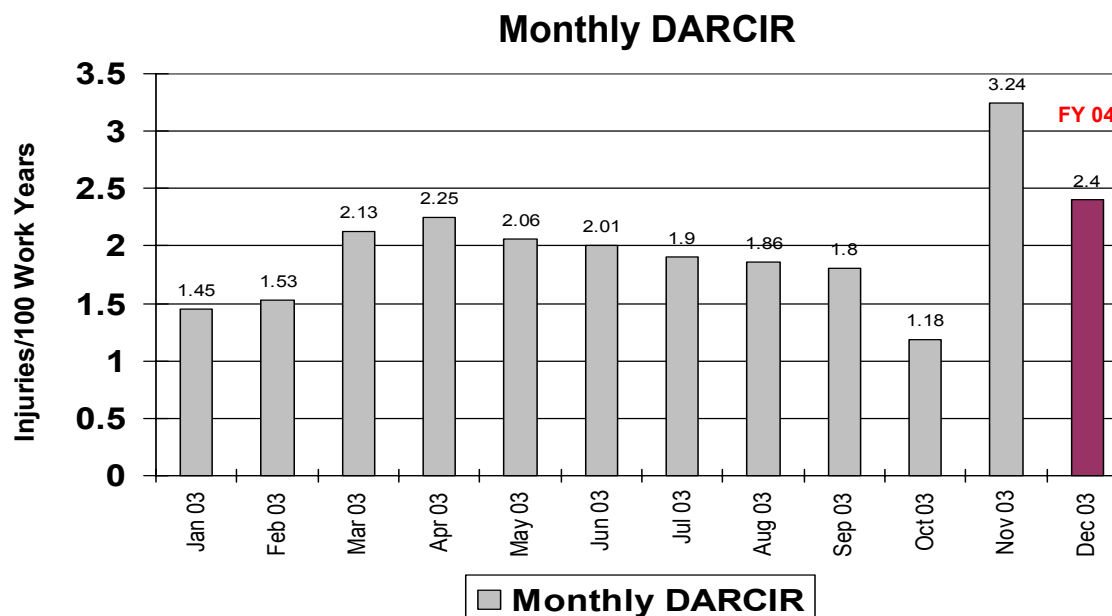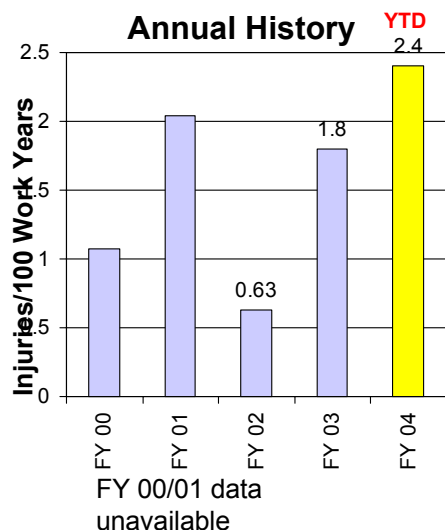## (Contractor)

FY 2004

Annual History — YTD 2.4

Injuries/100 Work Years

FY 00, FY 01, FY 02 (0.63), FY 03 (1.8), FY 04 (2.4)

FY 00/01 data unavailable

Monthly DARCIR

Injuries/100 Work Years

Jan 03: 1.45, Feb 03: 1.53, Mar 03: 2.13, Apr 03: 2.25, May 03: 2.06, Jun 03: 2.01, Jul 03: 1.9, Aug 03: 1.86, Sep 03: 1.8, Oct 03: 1.18, Nov 03: 3.24, Dec 03: 2.4 (FY 04)
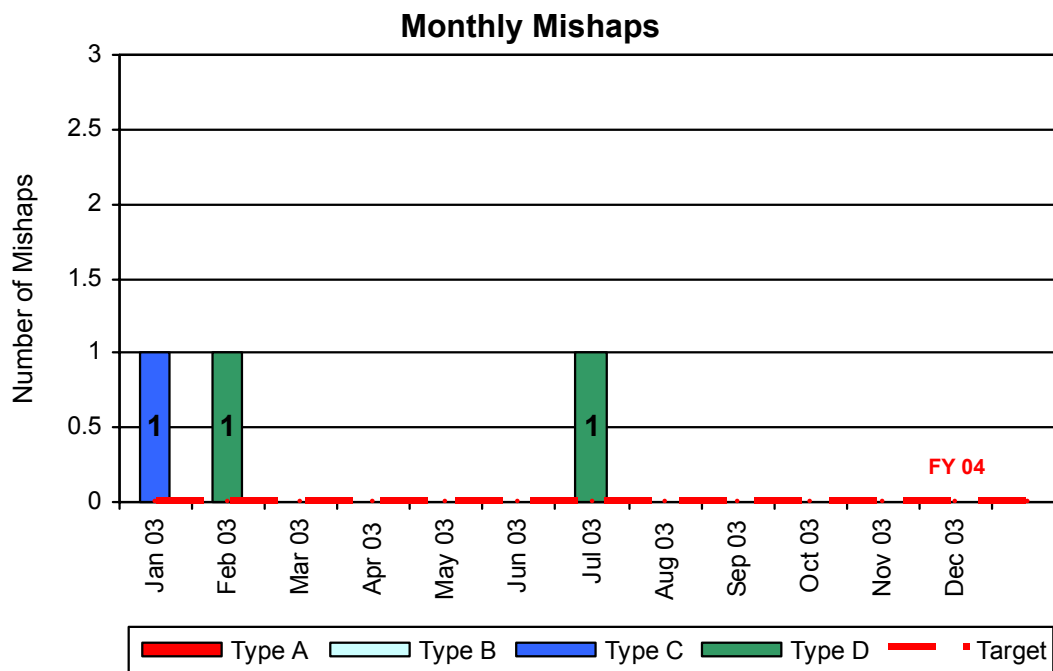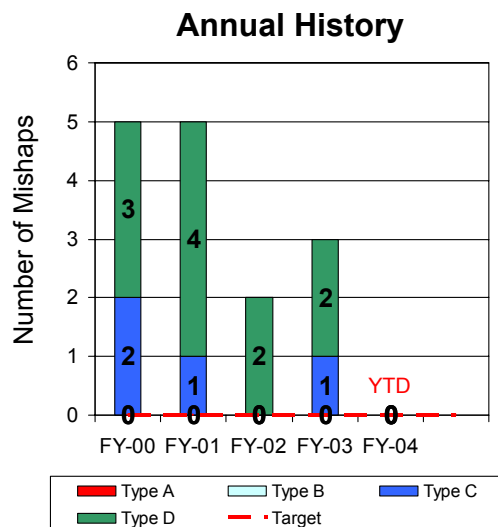
■ **Monthly DARCIR**

- **FY 2004 DARCIR for Contractors = 7 cases x 200k hours / 572.6k hours worked = 2.4**
  - **FY 2004: 5 lost time (Type C) + 2 restricted duty only (Type D) cases = 7 (total); 572.6k hours worked**
  - **December 2003: 1 lost time (Type C) + 0 restricted duty only (Type D) cases = 1 (total); 201.9k hours worked**
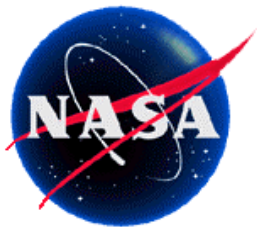
SSC Mishaps
(Civil Service)

FY 2004 Mishap Target = 0 Mishaps

Annual History

Monthly Mishaps

- **FY 2004 Number of Mishaps for Civil Service = 0 (meets target)**
  - **0 Type A and 0 Type B mishaps over recent years**
  - **Number of mishaps is down over recent years**
  - **FY 2004: 0 mishaps**
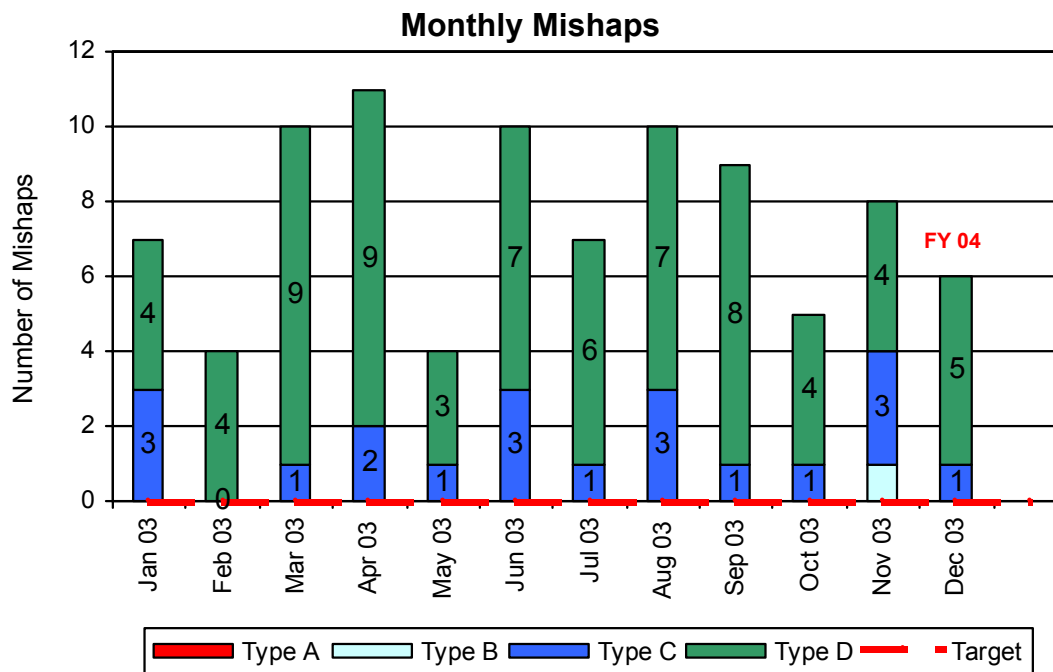 - **December 2003: 0 mishaps**
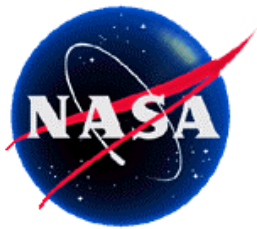
SSC Mishaps
(Contractor)

FY 2004 Mishap Target **= 0** Mishaps
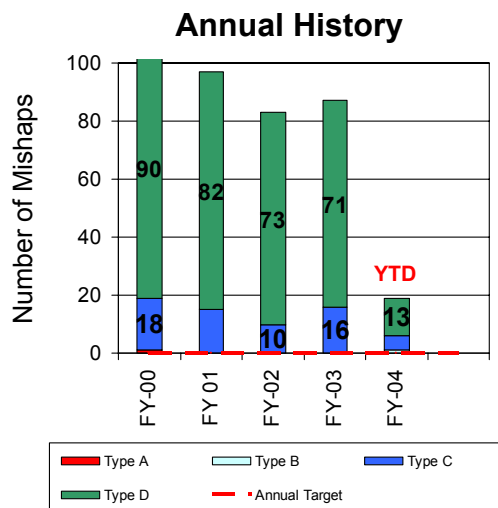
- **FY 2004 Number of Mishaps for Contractors = 19 (exceeds target)**
  - **0** Type A and **1** Type B mishap
  - FY 2004: **19** mishaps
  - December 2003: **6** mishaps

SSC Close Calls *
(Civil Service)

FY 2004 Close Calls Target = Report all Close Calls
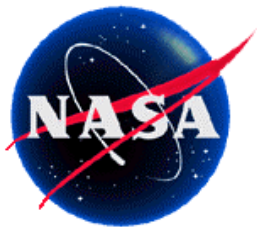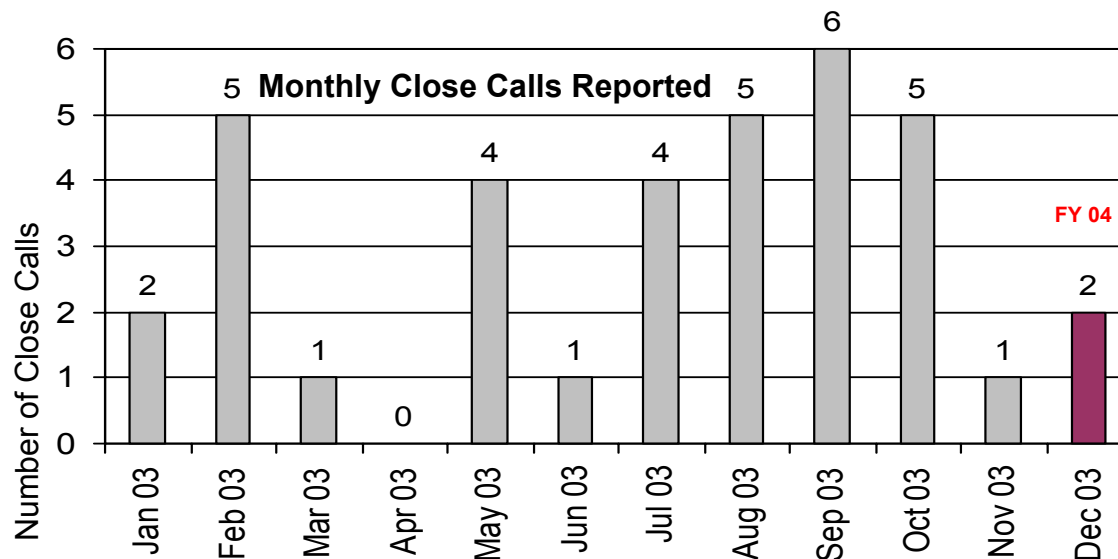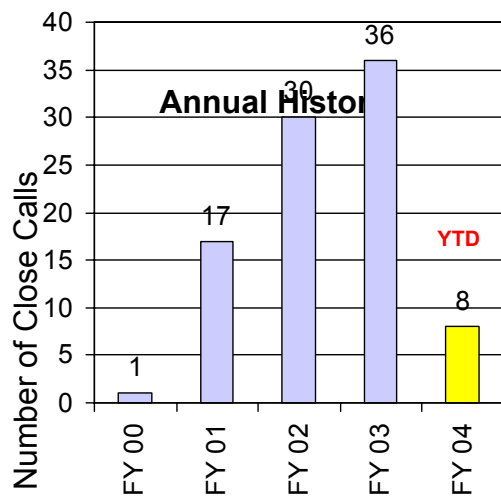

Annual History

Monthly Close Calls Reported

- **FY 2004 Number of Close Calls Reported by Civil Servants = 8 Close Calls**
    - **Number of close calls reported is flat over recent years**
    - **FY 2004: 8 close calls reported. At the current rate (12 months x 2.6**
      the FY 2004 projected total is 32. That would be lower, in comparison
      To last year
    - **December 2003: 2 close calls reported**

*   *Close Call: An unplanned and undesired event with no injury or injury requiring first aid only, no damage or only minor damage (less than $1,000), but possesses the potential to cause any type mishap, or any injury, damage, or negative mission impact.*
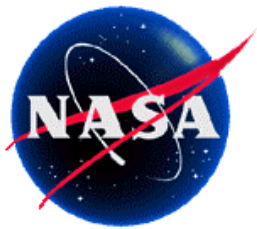
SSC Close Calls *
(Contractor)

FY 2004 Close Calls Target = Report all Close Calls

Annual History

Number of Close Calls

FY 00: 16
FY 01: 39
FY 02: 129
FY 03: 193
FY 04: 45 YTD

Monthly Close Calls Reported

Number of Close Calls

Jan 03: 6
Feb 03: 24
Mar 03: 30
Apr 03: 5
Many 03: 15
Jun 03: 31
Jul 03: 26
Aug 03: 21
Sep 03: 14
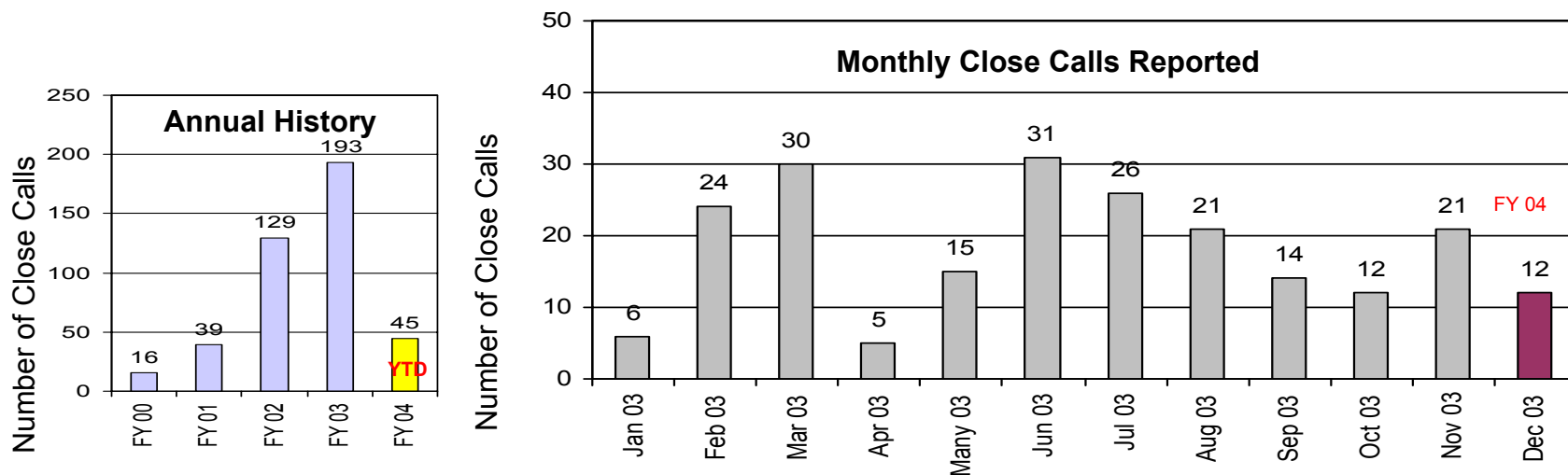Oct 03: 12
Nov 03: 21
Dec 03: 12 (FY 04)

- **FY 2004 Number of Close Calls Reported by Contractors = 45 Close Calls**
  - **Number of close calls reported is flat over recent years**
  - **FY 2004: 45 close calls reported. At the current rate (12 months x 15**
  - **the FY 2004 projected total is 180. That would be the lower, in comparison to last year**
  - **December 2003: 12 close calls reported**

* *Close Call: An unplanned and undesired event with no injury or injury requiring first aid only, no damage or only minor damage (less than $1,000), but possesses the potential to cause any type mishap, or any injury, damage, or negative mission impact.*
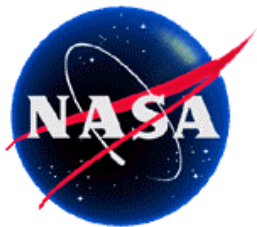
SSC Equipment/Property Damage or Mission Failure
(Civil Service)

FY 2004 Property Damage Target = $0

Annual History

Property Damage ($k)

- FY 00: 75
- FY 01: 57.5
- FY 02: 0
- FY 03: 15.4 — YTD
- FY 04: 0

Monthly Property Damage

Property Damage ($k)

- Feb 03: 10
- Jul 03: 5.4
- Dec 03: 0 — FY 04

Loss (thousands of dollars)
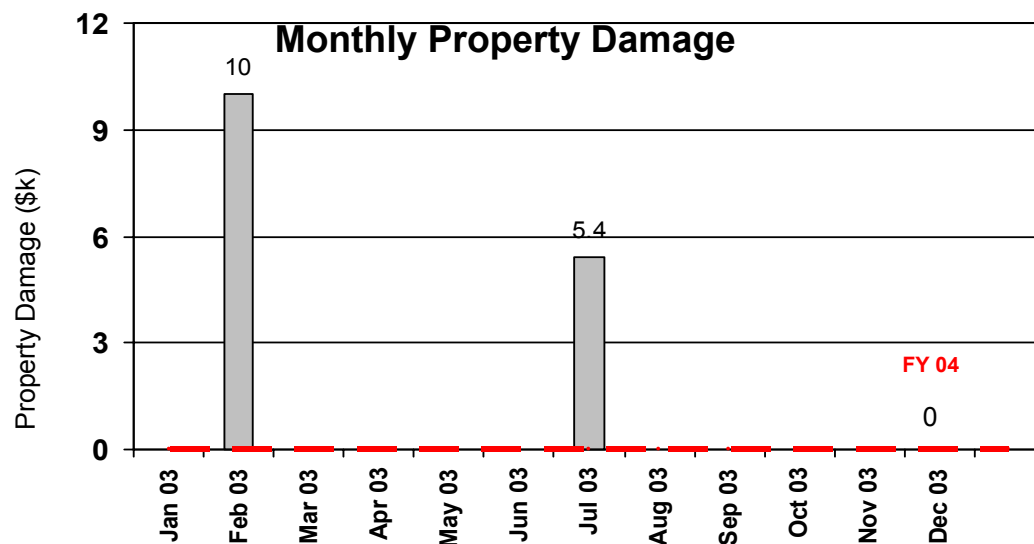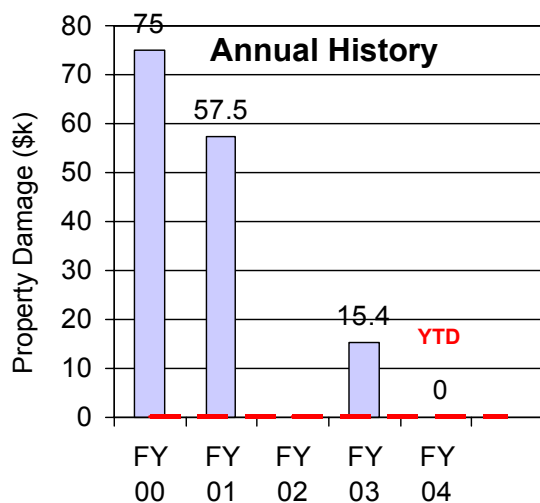
- **FY 2004 Total Dollar Value of Property Loss for Civil Service = $0 (meets target)**
  - **Property damage mishaps are down over recent years**
  - **FY 2004: 0 property damage mishaps**
  - **December 2003: 0 property damage mishaps**
  - **Jul: E1 TS Gaseous hydrogen flow C2 Damaged pumps**
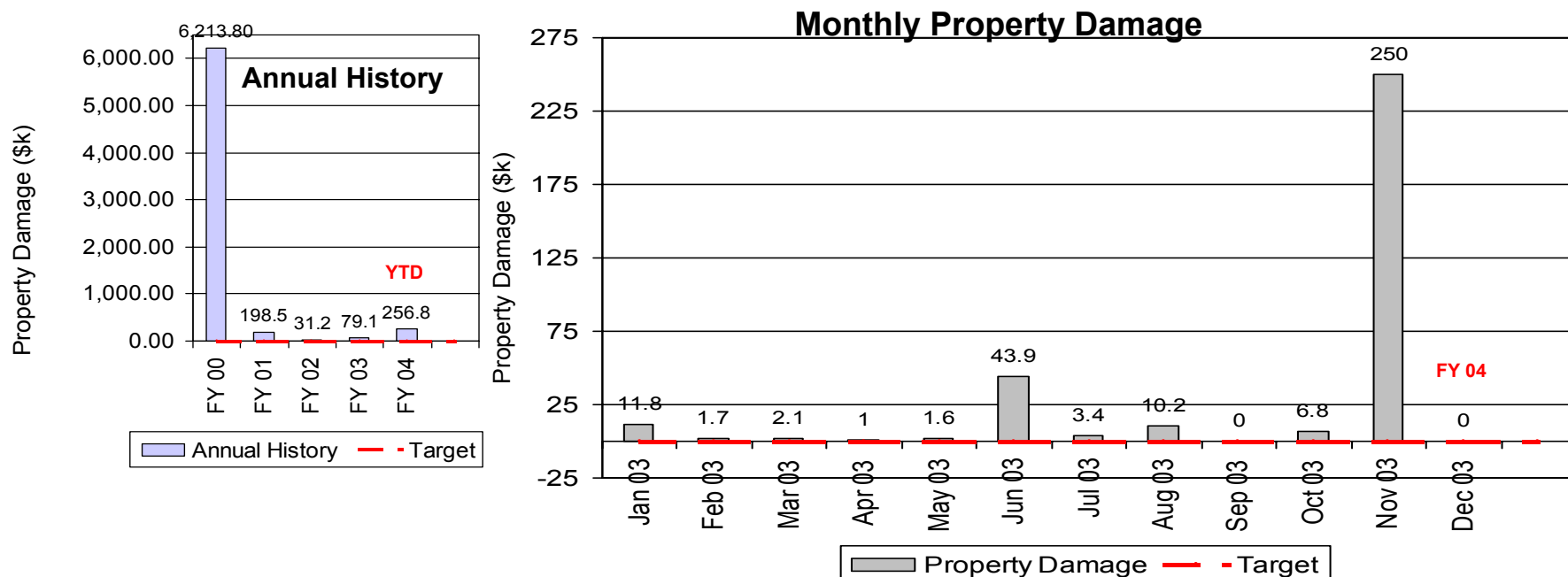 - **Feb: E1 TS Gaseous hydrogen blow down test C2 Man lift burned**
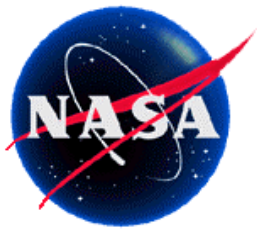
SSC Equipment/Property Damage or Mission Failure
(Contractor)

FY 2004 Property Damage Target = $0

Annual History

Property Damage ($k)

6,213.80

198.5 31.2 79.1 256.8

YTD

FY 00 FY 01 FY 02 FY 03 FY 04

Annual History — Target

Monthly Property Damage

Property Damage ($k)

250

43.9

11.8 1.7 2.1 1 1.6 3.4 10.2 0 6.8 0

FY 04

Jan 03 Feb 03 Mar 03 Apr 03 May 03 Jun 03 Jul 03 Aug 03 Sep 03 Oct 03 Nov 03 Dec 03

Property Damage — Target

- **FY 2004 Total Dollar Value of Property Loss for Contractors = $256.8k (exceeds target)**
  - **Property damage mishaps are up over recent years**
  - **FY 2004: 2 property damage mishaps ($256,800)**
  - **December 2003: 0 property damage mishaps**
  - **June B1 TS Damaged vent line Component Shop Over pressurized hydrostat of piping**
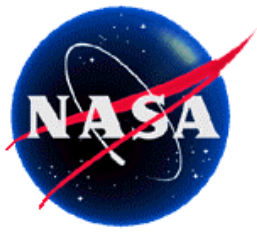
Occupational Health Program Assessment Process
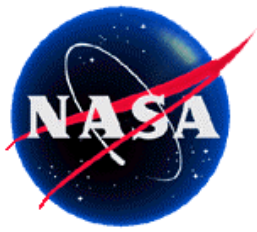# Health & Medical Systems Code Z
Audit Results

- **Industrial Hygiene (IH) / Environmental Health (EH) (Camomilli et. Al.) found:**
  - **Standards should be prepared for Bloodborne Pathogens, Automated External Defibrillators, and Ergonomics**
  - **"SPG 8715.1 adequately covers EH issues at E Test Complex…"**
  - **Report documentation thorough and comprehensive an "agency best practice."**
  - **SSC continue to work on getting Site Paramedic Support**
  - **Multiple types of exams for the same certification**
  - **Medical Surveillance program outstanding**
  - **Nurses were top notch**
  - **Clinic was proactive in discerning noise related Hearing Standard Threshold Shifts**
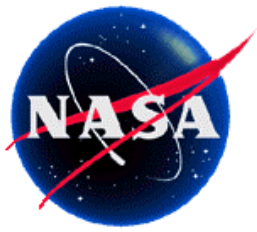
Health & Medical Systems Code Z
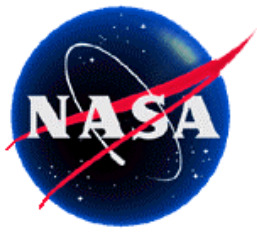# Audit Results - Cont'd

- Outer shipping containers were not being wipe tested per DOT requirements (though the sealed sources being transported inside were tested).

  - In aftermath of audit, it has been discovered that since only sealed sources are being transported, we are in compliance.

- Antiquated clinic X-Ray equipment should be replaced

  - (SSC had sought their assistance)

- "Solid Radiation Safety Program"

  - "Staff is Knowledgeable and Competent"

- "SSC has made significant improvements since last evaluation in the formation of Radiation Safety Committee."

  - "Offers great opportunity for all SSC residents to be brought under the umbrella …"

Health & Medical Systems Code Z
Audit Results - Cont'd

- At present, visual inspection following of full containment asbestos abatement jobs is performed by trained MSS field engineers

  - Panel believes the IH office should perform this function

- Policy on Ergonomics and Bloodborne Pathogens Needed

- Response and Mitigation of previous IH/EH findings excellent

- Solid progress to implementing sampling plan

- IH/EH Report Documentation and Communication

  - "Agency Best Practice"

Health & Medical Systems Code Z
Audit Results - Cont'd

– **Automatic External Defibrillator (AED)**

- **Need to provide AED coverage per public law – 3 minutes to response**

- **Site-wide policy is needed on AEDs**

– **Wellness Center**

- **Need to enlarge free weight areas**

- **Well trained Staff**

- **Commendation for best used database for collecting information**